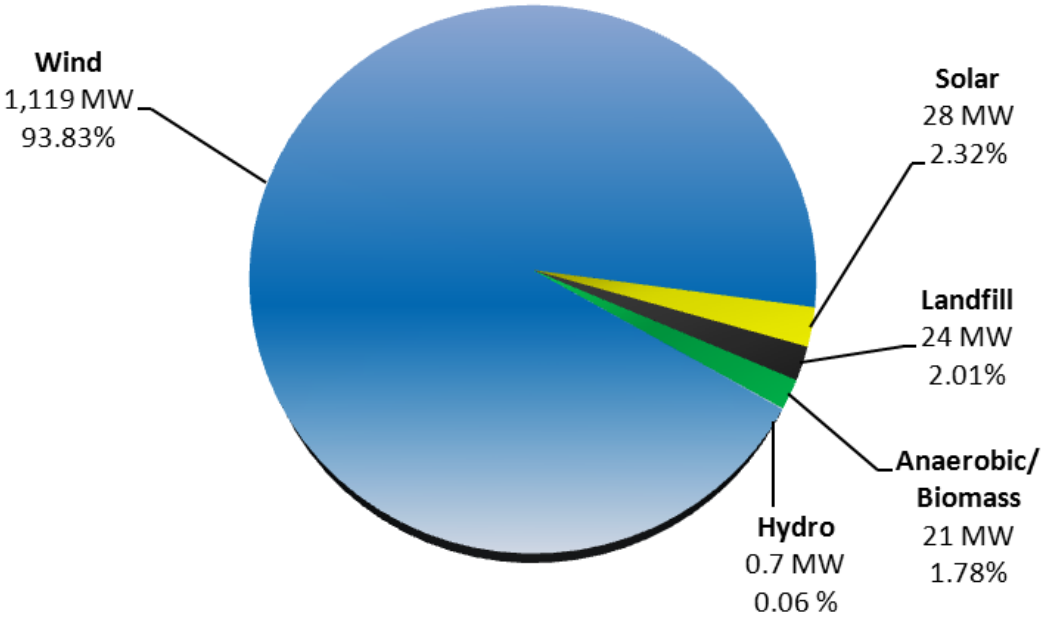
36. To what extent is distributed generation supplying the energy needs of Michigan customers?

Based on the data available, distributed generation currently supplies approximately two-tenths of 1% of the electricity needs of Michigan consumers. Even this figure likely overstates the contribution of distributed energy, as it also includes all new solar generation, anaerobic digestion, landfill gas, and refurbished small hydropower facilities.

The Michigan Public Service Commission is required to report annually to the legislature on the implementation of Michigan's Renewable Portfolio Standard. This report provides official and definitive information that can be relied upon through its coverage period. The most recent report, presented in February 2013, includes Commission activity through 2012 as well as electricity provider renewable energy report information through calendar 2011. This report can be found at www.michigan.gov/documents/mpsc/implementation_of_PA295_renewable_energy_411615_7.pdf.

Figure 5 of this report summarizes the contracts and projects approved by the Commission, as follows:



This figure indicates that distributed generation technologies constitute 6.17% of the new renewable electricity generation capacity developed as a result of Michigan's Renewable Portfolio Standard, with a

small amount of refurbished hydropower and the remainder roughly equally divided between landfill gas, anaerobic digestion, and solar. It is important to note that this figure includes some capacity, especially solar, that has been authorized by the Commission but will not be placed into commercial operation until 2013 or 2014. Even including the amount authorized but not yet built, generation from landfill gas, anaerobic digestion, refurbished hydro and solar amounts to approximately 72 MW of total distributed generation – or approximately 0.2% of the total 30,000 MW of total net summer generation capacity in Michigan.

Solar generation has been developed through two policies adopted by the State of Michigan in 2008 – the Renewable Portfolio Standard, and Net Metering. The Figure above does not include net metering systems. All electricity providers are required to meet the Renewable Portfolio Standard, but not all are required to include solar in their portfolio. All regulated utilities, Alternative Energy Suppliers, and Cooperative utilities are required to follow Net Metering policies and some municipal utilities have also chosen to allow net metering. Net metering is not limited to solar, but solar has been the dominant technology chosen by net metering customers with only a few choosing small-scale wind turbines. Net metering customers are widely distributed throughout the state but with a significant concentration in DTE's southeast Michigan territory.

Solar deployment associated with utility compliance with the Renewable Portfolio Standard has been modest compared to other technologies. Both programs are summarized through 2011 in a report of the Michigan Public Service Commission available at www.michigan.gov/documents/mpsc/NetMeteringReport_Aug2012_396259_7.pdf. Table 1 of that reports is duplicated below:

Table 1: Michigan Solar PV Totals (Estimate through 2011)

Program	Number of Installations	Total Participating Solar Capacity kW
Solar Net Metering (includes Detroit Edison SolarCurrents customer-owned projects)	784	5,193
Experimental Advanced Renewable Program (EARP) Consumers Energy	102	2,020
SolarCurrents (Detroit Edison-owned projects)	8	2,793
Total	894	10,006 kW
Net metering data is based on 2011 electric provider annual reports filed with the MPSC. Consumers Energy EARP and Detroit Edison SolarCurrents (both customer and company owned) data estimates were provided by the companies.		

Since the issuance of this report, Consumers Energy has been executing an additional tranche of solar contracts with its customers, under its Experimental Advanced Renewable Program, which provides a "feed-in tariff" for solar generation at a fixed tariff for a fixed period. Consumers Energy expects to support deployment of a total of 3,250 kW solar capacity in this tranche of their program. DTE has completed a total of 5,000 kW of customer-owned solar systems under their original Solar Currents program, which included about 500 kW that were not included in the Michigan Public Service Commission report referenced above. DTE's agreed to an additional 2,000 kW of customer-owned solar systems as well as completion of a total of 15,000 kW of company-owned solar systems on customer

premises.

Distributed generation in Michigan reflects varying levels of uptake of the technical potential as estimated by the National Renewable Energy Laboratory http://www.nrel.gov/docs/fy12osti/51946.pdf. Landfill gas already deployed is about two-thirds of the potential. Hydropower is about 60% of the potential (and this ignores river use and environmental conflicts). Solar deployed is less than one-thousandth of the rooftop potential and less than one in one-hundred-thousandth of total solar potential.